CLAIMS

We Claim:

1. An expression cassette, comprising a promoter operably linked to a nucleic acid molecule which, when transcribed *in vivo*, forms double stranded RNA that induces the production of interferon, wherein said expression cassette is selected from the group consisting of:

(a) an expression cassette which, when transcribed *in vivo*, forms self-complementary RNA; and

(b) an expression cassette comprising a first promoter operably linked to a first nucleic acid molecule, and a second promoter operably linked to a second nucleic acid molecule, wherein said first and second nucleic acid molecules, when transcribed *in vivo*, form double stranded RNA that induces the production of interferon.

2. The expression cassette according to claim 1 wherein said cassette comprises an expression cassette according to claim 1(a) and not claim 1(b).

3. The expression cassette according to claim 1 wherein said cassette comprises an expression cassette according to claim 1(b) and not claim 1(a).

4. The expression cassette according to claim 1 wherein said RNA is not translated into protein *in vivo*.

5. An expression cassette, comprising a promoter operably linked to a ribozyme or antisense nucleic acid molecule which, when transcribed *in vivo*, forms a ribozyme or antisense RNA molecule that promotes an immune response.

6. The expression cassette according to claim 5 wherein said ribozyme or antisense molecule cleaves or inhibits an RNA transcript that encodes a factor that inhibits cellular interferon production.

7. The expression cassette according to claim 6 wherein said ribozyme or antisense molecule cleaves or inhibits a transcript which encodes IRF1 or YY1.

8. The expression cassette according to claim 6 wherein said ribozyme or antisense molecule cleaves or inhibits a transcript which encodes IL-10 or a cyclooxygenase gene.

9. An expression cassette, comprising a promoter operably linked to a ribozyme or antisense nucleic acid molecule which, when transcribed *in vivo*, promotes apoptosis.

10. The expression cassette according to claim 9 wherein said nucleic acid molecule cleaves or inhibits a transcript which encodes Bcl-2 or Bcl-xL.

11. The expression cassette according to any one of claims 1, 5, or 9 wherein said promoter is a pol I or a pol III promoter

12 The expression cassette according to claim 11 wherein said pol III promoter is an Adenovirus VA1 promoter.

13. The expression cassette according to claim 9, further comprising a promoter operably linked to a nucleic acid molecule which, when transcribed *in vivo*, forms double stranded RNA that induces the production of interferon.

14. The expression cassette according to any one of claims 1, 5, or, 9, further comprising a promoter operably linked to a nucleic acid molecule that encodes a polypeptide of interest.

15. The expression cassette according to claim 14 wherein said promoter which is operably linked to a nucleic acid molecule that encodes a polypeptide of interest is a pol II promoter.

16. The expression cassette according to claim 15 wherein said pol II promoter is a promoter selected from the group consisting of CMV, SV40, MoMLV LTR and RSV LTR.

17. The expression cassette according to claim 14 wherein said polypeptide promotes apoptosis.

18. The expression cassette according to claim 14 wherein said polypeptide encodes an antigen from a pathogenic agent.

19. The expression cassette according to claim 18 wherein said pathogenic agent is a virus.

20. The expression cassette according to claim 19 wherein said virus is selected from the group consisting of HIV, HSV, HBV, HCV, HPV, and FIV.

21. The expression cassette according to claim 18 wherein said pathogenic agent is a bacteria, parasite or fungus.

22. The expression cassette according to claim 18 wherein said pathogenic agent is a tumor.

23. The expression cassette according to claim 14 wherein said polypeptide is a cytokine.

24. The expression cassette according to claim 23 wherein said cytokine is selected from the group consisting of IL-2, IL-12 and IL-15.

25. The expression cassette according to claim 23 wherein said cytokine is gamma-interferon.

26. An expression cassette, comprising a first promoter operably linked to a nucleic acid molecule which, when transcribed *in vivo*, forms double stranded RNA that induces the production of interferon, and a second promoter operably linked to a nucleic acid molecule that encodes an antigen from a pathogenic agent.

27. An expression cassette which directs the expression of a polypeptide that promotes apoptosis, and an antigen from a pathogenic agent.

28. The expression cassette according to claim 26 or 27 wherein said antigen is a viral antigen.

29. The expression cassette according to claim 28 wherein said viral antigen is from a virus selected from the group consisting of HIV, HSV, HBV, HCV, HPV, and EIV.

30. The expression cassette according to claim 26 or 27 wherein said pathogenic agent is a bacteria, parasite or fungus.

31. The expression cassette according to claim 26 or 27 wherein said pathogenic agent is a tumor.

32. The expression cassette according to claim 26 or 27 wherein said additional promoter is a pol II promoter.

33. The expression cassette according to claim 32 wherein said pol II promoter is selected from the group consisting of CMV, SV40, MoMLV LTR and RSV LTR.

34. A gene delivery vector, comprising an expression cassette according to anyone of claims 1, 5, 9, 26, or, 27.

35. The gene delivery vector according to claim 34 wherein said vector is a plasmid.

36. The gene delivery vector according to claim 34 wherein said vector is a recombinant retrovirus.

37. The gene delivery vector according to claim 34 wherein said vector is a recombinant herpesvirus.

38. The gene delivery vector according to claim 34 wherein said vector is a recombinant poxvirus.

39. The gene delivery vector according to claim 34 wherein said vector is a recombinant adenovirus.

40. The gene delivery vector according to claim 34 wherein said vector is a recombinant parvovirus.

41. The gene delivery vector according to claim 34 wherein said vector is a recombinant alphavirus.

42. The gene delivery vector according to claim 34 wherein said vector is a recombinant polyoma virus.

Sub. B1

43. The gene delivery vector according to claim 34 wherein said vector is a eukaryotic layered vector initiation system.

Sub. B5

44. A cell which contains an expression cassette according to claim 1 or a gene delivery vector according to claim 34.

45. A method of stimulating an immune response to a selected antigen within a desired host, comprising administering to said animal a gene delivery vector according to claim 34, such that an immune response is generated.